

CLAIMS

1. A diagnostic information presenting apparatus for a construction machine, comprising detection means (40-46, 47a, 47b, 47c) for detecting status variables regarding operating status or ambient environments of a construction machine (1); and

control means (2) for outputting, to display means (50), a basic data display signal to display basic data necessary for a usual screen (100) in accordance with detected signals from said detection means (40-46, 47a, 47b, 47c), and for outputting, to said display means (50), an alarm display signal or a failure display signal to present alarm display or failure display in accordance with alarm information regarding the status variables detected by said detection means (40-46, 47a, 47b, 47c) or failure information from said detection means.

2. The diagnostic information presenting apparatus for the construction machine according to Claim 1,

wherein said apparatus further comprises first storage means (2d, 2E) for storing combinations of snapshot menu items and the status variables made correspondent to the items per item in advance, and

said control means (2c, 2E, 2G) outputs, to said display means (50), a menu display signal to display a list of a plurality of manual snapshot items stored in said first storage means (2d, 2E) in accordance with a selection command (X) from an operator, and acquires or extracts, in

accordance with a selection command (X) from the operator to select one of the displayed list items, those of the status variable data, which are within a predetermined time and made correspondent to the selected item based on said combinations, from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said first storage means (2d, 2E, 3).

3. The diagnostic information presenting apparatus for the construction machine according to Claim 1,

wherein said apparatus further comprises second storage means (2d, 2F) for storing combinations of the alarm information or the failure information and the status variables made correspondent to the alarm information or the failure information in advance, and

when the alarm information or the failure information is inputted, said control means (2c, 2F) acquires or extracts those of the status variable data, which are within a predetermined time and made correspondent to the inputted information based on said combinations, from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said second storage means (2d, 2F, 3).

4. The diagnostic information presenting apparatus for the construction machine according to Claim 2 or 3,

wherein said control means (2c, 2E, 2F, 2G) outputs, to said display means (50), a reproduction display signal to reproduce and display changes of the status variable data which are stored in said first storage means (2d, 2E, 2F)

and are within the predetermined time.

5. The diagnostic information presenting apparatus for the construction machine according to Claim 1,

wherein said apparatus further comprises third storage means (2) for storing maintenance history information inputted in the past, and

said control means (2) outputs, to said display means (50), a maintenance history display signal to display a list of maintenance history stored in said third storage means (2) in accordance with a selection command (X) from an operator.

6. A diagnostic information presenting system for a construction machine, comprising detection means (40-46, 47a, 47b, 47c) for detecting status variables regarding operating status or ambient environments of a construction machine (1);

display means (50) disposed in a cab (14) of said construction machine (1); and

control means (2) for outputting, to said display means (50), a basic data display signal to display basic data necessary for a usual screen (100) in accordance with detected signals from said detection means (40-46, 47a, 47b, 47c), and for outputting, to said display means (50), an alarm display signal or a failure display signal to present alarm display or failure display in accordance with alarm information regarding the status variables detected by said detection means (40-46, 47a, 47b, 47c) or failure information from said detection means.

7. The diagnostic information presenting system for the construction machine according to Claim 6,

wherein said system further comprises first storage means (2d, 2E) for storing combinations of snapshot menu items and the status variables made correspondent to the items per item in advance, and

said control means (2c, 2E, 2G) outputs, to said display means (50), a menu display signal to display a list of a plurality of manual snapshot items stored in said first storage means (2d, 2E) in accordance with a selection command (X) from an operator, and acquires or extracts, in accordance with a selection command (X) from the operator to select one of the displayed list items, those of the status variable data, which are within a predetermined time and made correspondent to the selected item based on said combinations, from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said first storage means (2d, 2E, 3).

8. The diagnostic information presenting system for the construction machine according to Claim 6,

wherein said system further comprises second storage means (2d, 2F) for storing combinations of the alarm information or the failure information and the status variables made correspondent to the alarm information or the failure information in advance, and

when the alarm information or the failure information is inputted, said control means (2c, 2F) acquires or extracts those of the status variable data, which are within

a predetermined time and made correspondent to the inputted information based on said combinations, from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said second storage means (2d, 2F, 3).

9. The diagnostic information presenting system for the construction machine according to Claim 7 or 8,

wherein said control means (2c, 2E, 2F, 2G) outputs, to said display means (50), a reproduction display signal to reproduce and display changes of the status variable data which are stored in said first storage means (2d, 2E, 2F) and are within the predetermined time.

10. The diagnostic information presenting system for the construction machine according to Claim 6,

wherein said system further comprises third storage means (2) for storing maintenance history information inputted in the past, and

said control means (2) outputs, to said display means (50), a maintenance history display signal to display a list of maintenance history stored in said third storage means (2) in accordance with a selection command (X) from an operator.

11. A diagnostic information presenting method for a construction machine, the method comprising the steps of:

outputting, to display means (50), a basic data display signal to display basic data necessary for a usual screen (100) in accordance with detected signals of status variables outputted from detection means (40-46, 47a, 47b,

47c) and regarding operating status or ambient environments of a construction machine (1); and

outputting, to said display means (50), an alarm display signal or a failure display signal to present alarm display or failure display in accordance with alarm information regarding the status variables detected by said detection means (40-46, 47a, 47b, 47c) or failure information from said detection means.

12. The diagnostic information presenting method for the construction machine according to Claim 11, wherein said method further comprises the steps of:

outputting, to said display means (50), a menu display signal to display a list of a plurality of manual snapshot items, which are stored as a set of combinations made correspondent to the status variables per item in a first storage means (2d, 2E), in accordance with a selection command (X) from an operator; and

acquiring or extracting, in accordance with a selection command (X) from the operator to select one of the displayed list items, those of the status variable data, which are within a predetermined time and made correspondent to the selected item, from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said first storage means (2d, 2E, 3).

13. The diagnostic information presenting method for the construction machine according to Claim 11,

wherein said method further comprises the step of, when the alarm information or the failure information is inputted,

acquiring or extracting those of the status variable data, which are within a predetermined time, made correspondent to the inputted information, and are stored as the set of combinations in a second storage means (2d, 2F), from among the corresponding detected signals from said detection means (40-46, 47a, 47b, 47c), thereby storing those data in said second storage means (2d, 2F, 3).

14. The diagnostic information presenting method for the construction machine according to Claim 12 or 13,

wherein said method further comprises the step of outputting, to said display means (50), a reproduction display signal to reproduce and display changes of the status variable data which are stored in said first storage means (2d, 2E, 2F) and are within the predetermined time.

15. The diagnostic information presenting method for the construction machine according to Claim 11,

wherein said method further comprises the step of outputting, to said display means (50), a maintenance history display signal to display a list of maintenance history, which has been inputted in the past and stored in a third storage means (2), in accordance with a selection command (X) from an operator.